

WE CLAIM:

1. A stabilizing device for damping vibrations in an object positioned on a surface, which comprises:
 - (a) a bracket configured to connect to the object;
 - 5 (b) legs, each leg having a first end and a second end with first damping material between the ends and connected at the first end to the bracket; and
 - (c) side arms each having a first end and a second end with second damping material between the ends and
10 connected at the first end to the bracket.
2. The device of Claim 1 wherein a forward arm having a first end and a second end forming a longitudinal axis of the forward arm is connected at the first end to the bracket, the forward arm having third damping material between the ends.
3. The device of Claim 2 wherein the ends of each leg form a longitudinal axis of each leg and wherein the longitudinal axis of one of the legs is at an angle of approximately 90° to the longitudinal axis of the forward arm.
4. The device of Claim 2 wherein the longitudinal axis of the forward arm is parallel to a longitudinal axis of the object when the object is connected to the bracket.
5. The device of Claim 2 wherein the third damping material is spaced apart from the first end of the forward arm.
6. The device of Claim 2 wherein the forward arm is connected to the bracket so that when the object is connected to the bracket, the forward arm extends outward from the bracket along the object.

7. The device of Claim 1 wherein the ends of each leg form a longitudinal axis of each leg and the ends of each side arm form a longitudinal axis of each side arm and wherein the longitudinal axis of one of the legs is at an angle of approximately 90° to the longitudinal axis of one of the side arms.

8. The device of Claim 1 or 2 wherein a plate is pivotably connected to the bracket and wherein the legs are connected to the bracket and the object is connected to the plate so that the object can be pivoted while the legs remain stationary.

9. The device of Claim 8 wherein the forward arm is connected to the plate.

10. The device of Claim 1 or 2 wherein the bracket includes a first leg and a second leg connected together at an angle by a center portion, and wherein one of the legs is connected to the first leg of the bracket and the other of the legs is connected to the second leg of the bracket.

11. The device of Claim 10 wherein one of the side arms is connected to the first leg of the bracket and the other of the side arms is connected to the second leg of the bracket.

12. The device of Claim 1 or 2 wherein the first damping material includes a plurality of separable damping units.

13. The device of Claim 12 wherein at least two of the separable damping units are constructed of damping material having different damping characteristics for damping different vibration frequencies.

14. The device of Claim 1 wherein the second damping material is spaced apart from the first ends of the side arms.

15. A stabilizing device for damping vibrations in a firearm positioned on a surface, which comprises:

(a) a bracket configured to connect to the firearm;

5 (b) legs, each leg having a first end and a second end with first damping material between the ends and connected at the first end to the bracket; and

(c) side arms each having a first end and a second end with second damping material between the ends and
10 connected at the first end to the bracket.

16. The device of Claim 15 wherein the ends of each leg form a longitudinal axis of each leg and the ends of each side arm form a longitudinal axis of each side arm and wherein the longitudinal axis of one of the legs is at an angle of
5 approximately 90° to the longitudinal axis of one of the side arms.

17. The device of Claim 15 wherein the legs are pivotably connected to the bracket.

18. The device of Claim 15 wherein a plate is pivotably connected to the bracket and wherein the firearm is connected to the plate so that the firearm can be pivoted while the legs remain stationary.

19. The device of Claim 15 wherein the second damping material is spaced apart from the first ends of the side arms.

20. The device of Claim 15 wherein the bracket includes a first leg and a second leg connected together at an angle by a center portion, and wherein one of the legs is connected to the first leg of the bracket and the other of the legs is
5 connected to the second leg of the bracket.

21. The device of Claim 20 wherein one of the side arms is connected to the first leg of the bracket and the other of the side arms is connected to the second leg of the bracket.

22. The device of Claim 15 wherein the first damping material includes a plurality of separable damping units.

23. The device of Claim 22 wherein at least two of the separable damping units are constructed of damping material having different damping characteristics for damping different vibration frequencies.

24. The device of Claim 15 wherein the second ends of the legs are provided with feet constructed of a third damping material.

25. The device of Claim 24 wherein the feet are constructed of a rubber material which grips the surface.

26. The device of Claim 15 wherein there are three legs spaced apart approximately 60° about a vertical axis of the bracket.

27. A stabilizing device for damping vibrations in a firearm positioned on a surface, which comprises:

(a) a bracket configured to connect to the firearm;

5 (b) legs, each leg having a first end and a second end with the first end of each leg connected to the bracket, each leg having first damping material between the ends; and

(c) a forward arm having a first end and a second
10 end forming a longitudinal axis of the forward arm with the first end of the forward arm connected to the bracket and having second damping material between the ends.

28. The device of Claim 29 wherein the ends of each leg form a longitudinal axis of each leg and wherein the longitudinal axis of one of the legs is at an angle of approximately 90° to the longitudinal axis of the forward arm.
29. The device of Claim 28 wherein the legs are pivotably connected to the bracket.
30. The device of Claim 27 wherein the bracket includes a plate pivotably connected to a bracket section wherein the legs are connected to the bracket section of the bracket and the firearm is connected to the plate of the bracket so that
5 the firearm can be pivoted while the legs remain stationary.
31. The device of Claim 30 wherein the forward arm is connected to the plate.
32. The device of Claim 27 wherein the longitudinal axis of the forward arm is parallel to a longitudinal axis of a barrel of the firearm when the firearm is mounted on the bracket.
33. The device of Claim 27 wherein the second damping material is spaced apart from the first end of the forward arm.
34. The device of Claim 27 wherein the bracket includes a first leg and a second leg connected together at an angle by a center portion, wherein the forward arm is mounted on the center portion of the bracket and wherein one of the legs is
5 connected to the first leg of the bracket and the other one of the legs is connected to the second leg of the bracket.
35. The device of Claim 27 wherein the forward arm is connected to the bracket so that when the firearm is connected to the bracket, the forward arm extends outward from the bracket along a barrel of the firearm in a direction opposite
5 a stock of the firearm.

36. The device of Claim 27 wherein the first damping material includes a plurality of separable sections.

37. The device of Claim 36 wherein each leg has at least two separable sections and wherein at least two of the sections are constructed of leg damping material having different damping characteristics for damping different vibration
5 frequencies.

38. The device of Claim 27 wherein the second ends of the legs are provided with feet constructed of a third damping material.

39. The device of Claim 27 wherein there are three legs spaced apart approximately 60° about a vertical axis of the bracket.

40. A stabilizing device for damping vibrations in a firearm positioned on a surface, which comprises:

(a) a bracket configured to connect to the firearm;

5 (b) legs, each leg having a first end and a second end and connected at the first end to the bracket, each leg having first damping material between the ends;

(c) side arms, each arm having a first end and a second end and connected at the first end to the bracket,
10 each side arm having second damping material between the ends;
and

(d) a forward arm having a first end and a second end and connected at the first end to the bracket and having third damping material between the ends.

41. The device of Claim 40 wherein there are three legs spaced apart approximately 60° about a vertical axis of the bracket.

42. The device of Claim 40 wherein the ends of each leg form a longitudinal axis of each leg and the ends of each side arm form a longitudinal axis of each side arm and wherein the longitudinal axis of one of the legs is at an angle of approximately 90° to the longitudinal axis of one of the side arms.

43. The device of Claim 40 wherein the ends of each leg form a longitudinal axis of each leg and wherein the longitudinal axis of one of the legs is at an angle of approximately 90° to the longitudinal axis of the forward arm.

44. The device of Claim 40 wherein the ends of each leg form a longitudinal axis of each leg and the ends of each side arm form a longitudinal axis of each side arm and the ends of the forward arm form a longitudinal axis of the forward arm and wherein the longitudinal axis of one of the legs is approximately at a 90° angle to the longitudinal axis of one of the side arms and approximately at an 80° angle to the longitudinal axis of the forward arm.

45. The device of Claim 40 wherein the legs are pivotably connected to the bracket.

46. The device of Claim 40 wherein the bracket includes a plate pivotably connected to a bracket section, and wherein the legs are connected to the bracket section of the bracket and the firearm is connected to the plate so that the firearm can be pivoted while the legs remain stationary.

47. The device of Claim 46 wherein the forward arm is connected to the plate.

48. The device of Claim 46 wherein the side arms are connected to the bracket section.

49. The device of Claim 40 wherein the longitudinal axis of the forward arm is parallel to a longitudinal axis of a barrel of the firearm when the firearm is mounted on the bracket.

50. The device of Claim 40 wherein the second damping material is spaced apart from the first end of the side arms.

51. The device of Claim 40 wherein the third damping material is spaced apart from the first end of the forward arm.

52. The device of Claim 40 wherein the bracket includes a first leg and a second leg connected together at an angle by a center portion, wherein the forward arm is mounted on the center portion of the bracket and wherein each of the legs and
5 each of the side arms is connected to the first and second legs of the bracket.

53. The device of Claim 40 wherein the forward arm is connected to the bracket so that when the firearm is mounted on the bracket, the forward arm extends outward from the bracket along a barrel of the firearm in a direction opposite
5 a stock of the firearm.

54. The device of Claim 40 wherein the first damping material includes a plurality of separable sections.

55. The device of Claim 54 wherein each leg has at least two separable sections and wherein at least two of the sections are constructed of damping material having different damping characteristics for damping different vibration frequencies.

56. The device of Claim 40 wherein there are a plurality of forward arms and wherein the forward arms are spaced apart and parallel.

57. A stabilizing device for damping vibrations in a firearm positioned on a surface, which comprises:

(a) a bracket configured to connect to the firearm;

5 (b) a leg having a first end and a second end forming a longitudinal axis of the leg with the first end of the leg connected to a center of the bracket, the leg having first damping material between the ends;

(c) side arms, each side arm having a first end
10 and a second end with the first end of each side arm connected to the bracket and each side arm having second damping material between the ends; and

(d) a forward arm having a first end and a second end and connected at the first end to the bracket and having
15 third damping material between the ends.

58. A method for reducing vibration in a firearm positioned on a surface, which comprises the steps of:

(a) providing a stabilizing device including a bracket, legs having a first damping material connected to the
5 bracket and side arms having second damping material connected to the bracket;

(b) connecting the firearm to the bracket;

(c) positioning the legs of the bracket on the surface;

10 (d) aligning the firearm with a target; and

(e) pulling a trigger of the firearm to hit the target wherein the stabilizing device reduces the vibration of the firearm to enable a more accurate shot.

59. The method of Claim 58 wherein in steps (d) and (e), the side arms reduce vibrations in the firearm in a direction perpendicular to a longitudinal axis of the firearm formed by a barrel of the firearm.

60. The method of Claim 58 wherein a forward arm extends outward from the bracket in a direction parallel to a longitudinal axis of the firearm formed by a barrel of the firearm and, wherein in step (e), the forward arm reduces
5 vibrations in the firearm parallel to the longitudinal axis of the firearm.

61. The method of Claim 58 wherein a scope is attached to the firearm, wherein before step (d), the firearm is aligned with a target using the scope and wherein the stabilizing device reduces vibration of the firearm and the scope to enable
5 easier and better alignment of the firearm with the target using the scope.

62. The method of Claim 58 wherein the legs of the stabilizing device are constructed of a plurality of damping units removably connected together, wherein the surface is vibrating and wherein in step (c), after positioning the legs
5 on the surface, the legs are removed from the surface and the damping units of the legs are removed or replaced with alternate damping units having different damping characteristics and the legs are positioned back on the surface to enable better reduction of vibration.

63. The method of Claim 58 wherein in step (e), the stabilizing device reduces vibration in the firearm caused by operation of the firearm.

64. The method of Claim 58 wherein the surface is vibrating and wherein in step (e), the stabilizing device reduces a transfer of vibration from the surface to the firearm.

65. The method of Claim 64 wherein a scope is mounted on the firearm, and wherein further in step (d), the stabilizing device reduces the vibration of the firearm and the scope so that the firearm can be aligned with the target using the scope.

66. A method for reducing vibrations of a firearm positioned on a surface, which comprises the steps of:

- (a) providing a stabilizing device including a bracket, legs connected to the bracket having first damping material, side arms connected to the bracket having second damping material and a forward arm connected to the bracket having third damping material;
- (b) connecting the firearm on the bracket;
- (c) positioning the legs of the stabilizing device on the surface;
- (d) aligning the firearm with a target; and
- (e) pulling a trigger of the firearm to shoot the target wherein the stabilizing device reduces vibration in the firearm to allow for a more accurate shot.

67. The method of Claim 66 wherein in steps (d) and (e), the side arms reduce vibrations in the firearm in a direction perpendicular to a longitudinal axis of the firearm formed by a barrel of the firearm.

68. The method of Claim 66 wherein the forward arm extends outward from the bracket in a direction parallel to a longitudinal axis of the firearm formed by a barrel of the firearm and, wherein in step (e), the forward arm reduces vibrations in the firearm parallel to the longitudinal axis of the firearm.

69. The method of Claim 66 wherein a scope is attached to the firearm, wherein before step (d), the firearm is aligned with a target using the scope and wherein the stabilizing device reduces vibration of the firearm and the scope to enable easier and better alignment of the firearm with the target using the scope.

70. The method of Claim 66 wherein the legs of the stabilizing device are constructed of a plurality of damping units removably connected together, wherein the surface is vibrating and wherein in step (c), after positioning the legs on the surface, the legs are removed from the surface and the damping units of the legs are removed or replaced with alternate damping units having different damping characteristics and the legs are positioned back on the surface to enable better reduction of vibration.

71. The method of Claim 66 wherein in step (e), the stabilizing device reduces vibration of the firearm caused by operation of the firearm.

72. The method of Claim 66 wherein the surface is vibrating and wherein in step (e), the stabilizing device reduces a transfer of vibration from the surface to the firearm.

73. The method of Claim 72 wherein a scope is mounted on the firearm, and wherein further in step (d), the stabilizing device reduces the vibration of the firearm and the scope so that the firearm can be aligned with the target using the scope.

74. A method for reducing vibration in an object positioned on a surface, which comprises the steps of:

(a) providing a stabilizing device including a bracket, legs having a first damping material connected to the bracket and side arms having second damping material connected to the bracket;

(b) connecting the object to the bracket;

(c) positioning the legs of the bracket on the surface;

(d) aligning the object with a target; and

(e) operating the object wherein the stabilizing device reduces the vibration in the object to enable a more accurate operation of the object.

75. The method of Claim 74 wherein in steps (d) and (e), the side arms reduce vibrations in the object in a direction perpendicular to a longitudinal axis of the object.

76. The method of Claim 74 wherein a forward arm extends outward from the bracket in a direction parallel to a longitudinal axis of the object and, wherein in step (e), the forward arm reduces vibrations in the object parallel to the longitudinal axis of the object.

77. The method of Claim 74 wherein the legs of the stabilizing device are constructed of a plurality of damping units removably connected together, wherein the surface is vibrating and wherein in step (c), after positioning the legs on the surface, the legs are removed from the surface and the damping units of the legs are removed or replaced with alternate damping units having different damping characteristics and the legs are positioned back on the surface to enable better reduction of vibration.

78. The method of Claim 74 wherein in step (e), the stabilizing device reduces vibration in the object caused by operation of the object.

79. The method of Claim 74 wherein the surface is vibrating and wherein in step (e), the stabilizing device reduces a transfer of vibration from the surface to the object.